

ANNOTATED CHECKLIST OF THE VASCULAR FLORA OF THE HICKORY CREEK UNIT OF THE BIG THICKET NATIONAL PRESERVE, TYLER COUNTY, TEXAS

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ABSTRACT

An annotated, vouchered checklist is provided of the vascular plant taxa of the 284 hectares Hickory Creek Unit of the Big Thicket National Preserve, Tyler County, in southeast Texas. The Hickory Creek Unit consists of four plant communities: wetland pine savanna, upland pine savanna, pond, and baygall. Four hundred one taxa are documented and their community affiliations are given. Previous lists for this unit numbered over 500 taxa. We believe that the discrepancy is the result of the larger lists being, in part, "conceptual" (what could be there, not what was actually there).

KEY WORDS: Big Thicket National Preserve, floristics, Hickory Creek Unit, Texas

RESUMEN

Se ofrece un catalogo anotado, con pliegos testigo de los taxa de plantas vasculares de las 284 hectareas de la Hickory Creek Unit de la Big Thicket National Preserve, Condado de Tyler, en el sureste de Texas. La Hickory Creek Unit consiste en cuatro comunidades vegetales: sabana húmeda de pinos, sabana en tierras altas de pinos, estanque, y matorral de *Ilex coriacea*. Se documentan cuatrocientos un taxa y se da la filiación a su comunidad. Los listados previos de esta unidad contenían más de 500 taxa. Creemos que la discrepancia es el resultado de que las grandes listas fueron en parte "conceptuales" (lo que puede estar allí, no lo que está actualmente allí).

INTRODUCTION

The Big Thicket region of southeast Texas has been characterized as floristically rich (Gunter 1971; Eisner 1973; Ajilvsgi 1979; Watson 1979, 1986; Peacock 1994; Official Guide 1997), a characterization that persists in spite of the fact that botanically the entire area is understudied and underdocumented. As yet, there is no vouchered and annotated plant list for the Big Thicket region, for the Big Thicket National Preserve, or for any of the twelve Big Thicket National Preserve units. The best plant lists from the entire area are the one for the Roy E. Larsen Sandylands Sanctuary, Hardin County (Matos & Rudolph 1985) and the one for the Little Thicket Nature Sanctuary, San Jacinto County (Peterson & Brown 1983). Even at the county level, the only vouchered lists are those of

Nesom and Brown (1998), which are considered by the authors to be “preliminary.” All other plant lists for the Big Thicket region, beginning with Parks & Cory (1936) and continuing through Watson (1982), U.S. National Park Service (1993), and Yu (n.d.) are unannotated and are not based on vouchered specimens. Consequently there is no way to determine whether the lists represent what the author found or whether they represent what Cozine (1993) calls a “speculative checklist”; a conjectural compilation of what possibly might be there, not what is actually known to be there.

The purpose of this study was to begin a baseline floristic list for the Big Thicket region and the Big Thicket National Preserve by producing an annotated, vouchered checklist of the vascular flora for one unit of the Big Thicket National Preserve.

SITE AND METHODS

The Big Thicket is located mostly within the longleaf pine region of the West Gulf Coastal Plain in southeast Texas (Parks & Cory 1936; McLeod 1971; Harcombe & Marks 1979; Marks & Harcombe 1981; Harcombe et al. 1993). The Big Thicket National Preserve consists of 12 units scattered over seven Texas counties. The units range from 222 hectares to 10,100 hectares and total about 34,000 hectares (Peacock 1994). The unit we selected for a floristic inventory is the 284 hectare Hickory Creek Unit, located in southern Tyler County (Fig. 1). The Hickory Creek Unit, which consists of four plant communities (pond, wetland pine savanna, upland pine savanna, baygall), was chosen for inclusion in the Big Thicket National Preserve because of its pine savannas (see Ajilvsgi [1979]; Watson [1979], Harcombe & Marks [1981]; and MacRoberts & MacRoberts [1998] for descriptions of these communities). The natural characteristic of the unit was relatively flat open “grasslands” with scattered longleaf pines. The unit has little relief and ranges from 35 meters to 42 meters elevation. Aerial photographs show the unit still partly open in 1974 when the Big Thicket National Preserve acquired it, but most openings have subsequently been invaded by shrubs and offsite pines due largely to fire suppression and dormant-season prescription burns (Streng & Harcombe 1982; McClung 1988; Bridges & Orzell 1989; MacRoberts & MacRoberts 2000). Details regarding edaphic and climatic factors of the Hickory Creek Unit can be found in Deshotels (1978), Watson (1979), Marks and Harcombe (1981), and Streng and Harcombe (1982). A map of the unit is in Harcombe and Marks (1979) and in Streng and Harcombe (1982).

Like all the units of the Big Thicket National Preserve, the Hickory Creek Unit has not been the subject of a floristic inventory although extensive but desultory collecting and floristic sampling has occurred there (Streng 1979; Streng & Harcombe 1982; Watson 1982). Nonetheless, the Hickory Creek Unit is perhaps the best collected unit of the Big Thicket National Preserve. Streng (1979 and Streng & Harcombe 1982) conducted a study of factors affecting tree

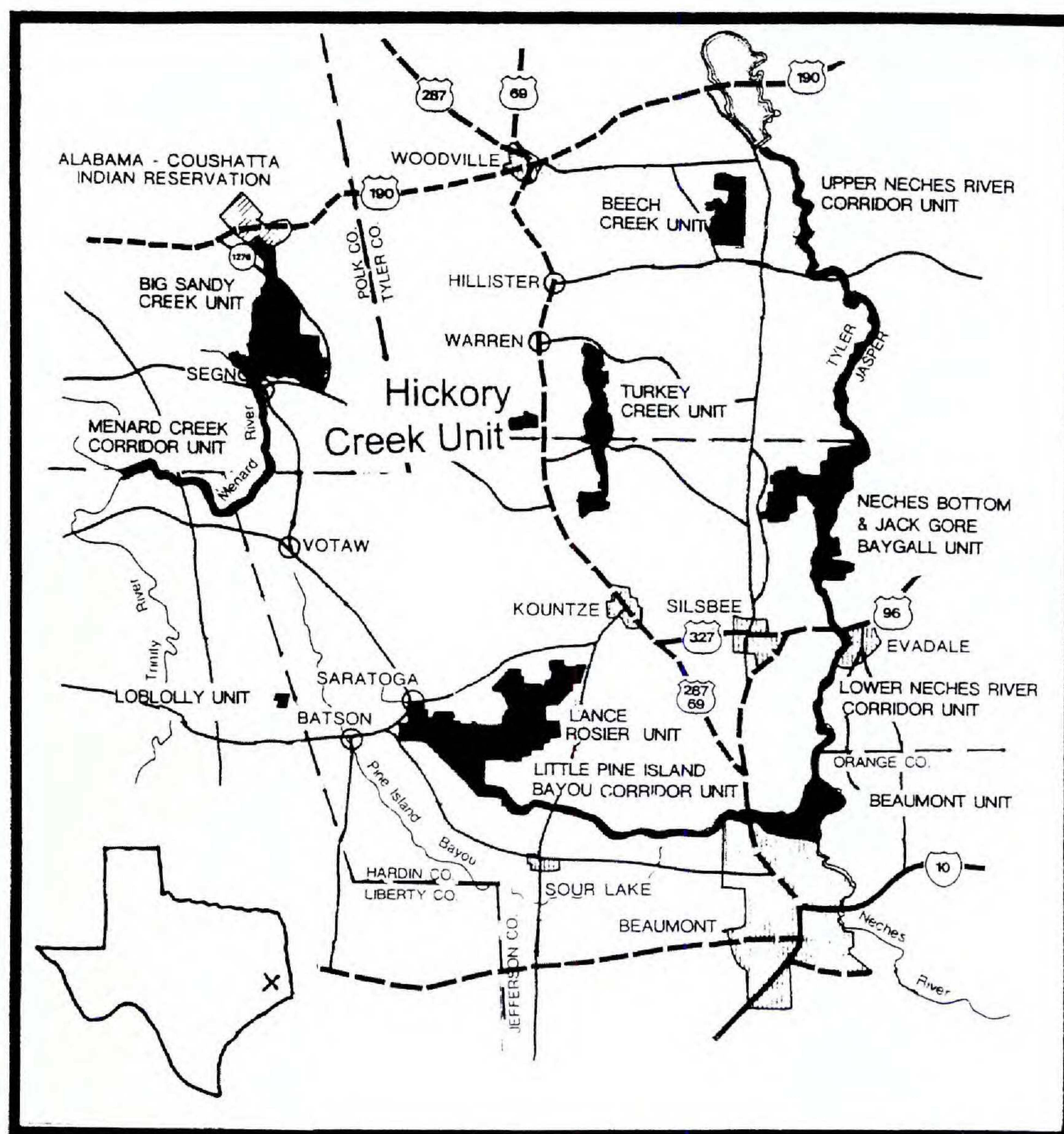


FIG. 1. Location of Hickory Creek Unit within the Big Thicket National Preserve, Texas.

density in the Hickory Creek Unit in the late 1970s and made extensive plant collections. Geraldine Watson, former botanist with the Big Thicket National Preserve, also collected there in the 1970s and 1980s. Their plant specimens have been housed largely at Rice and Lamar universities along with a few collections by Paul Harcombe, Peter Marks, and C. Liu. These collections number about 300 sheets. There are also a few collections housed at SHST and SBSC.

The MacRoberts' collected 430 specimens from the Hickory Creek Unit during 13 field trips beginning 7 March 2000 and ending 13 September 2001. Larry Brown collected about 179 specimens from the unit during four field trips between 27 April and 5 October 2001 (he had previously collected about 30 specimens between 1979 and 1997).

Since our purpose is to produce a list of taxa known to occur on the Hickory Creek Unit, a vouchered specimen was considered to be the only evidence acceptable for inclusion in the list. In all, about 950 herbarium specimens form the data for this report.

Rejected are three previous lists: Watson (1982) produced a list of about 530 taxa for the Hickory Creek Unit, the U.S. National Park Service (1993) produced a list of about 1200 taxa for the entire Big Thicket National Preserve, and Yu (n.d.) produced a list of 525 taxa, excluding trees, for the Hickory Creek Unit. The Yu and National Park Service lists are based largely on the Watson list. Aside from being unannotated and not vouchered, inclusion criteria are not explained for any of these lists. Also, all three lists were found to have extensive misidentifications and dubious entries (Brown & Brown 1996; Brown n.d.).

Nomenclature follows Kartesz (1994), Jones et al. (1997), and Kartesz and Meacham (1999) in most cases.

The following abbreviations are used:

CL = C. Liu. His specimens are at Rice University.

DS = Donna Streng. Her collections are unnumbered and are at Rice University.

GW = Geraldine Watson. Unless otherwise indicated, her National Park Service specimens are at Rice University.

LB = Larry Brown. Unless otherwise indicated, his specimens are at SBSC.

McL = C.A. McLeod. His collections are unnumbered and are at SHST.

MM = Barbara R. and Michael H. MacRoberts. Except where noted, their collections are temporarily at Rice University.

MW = Michael Warnock. His specimens are at SHST.

PH = Paul Harcombe. His specimens are at Rice University.

PM = Peter Marks. His collections are at Rice University.

* = exotic

+ = see note at end of list.

The MacRoberts, Streng, Watson, Harcombe, Marks, and Liu specimens have been annotated by Larry Brown (Brown & Brown 1996; Brown n.d.). Barbara MacRoberts and Justin Williams examined the specimens of McLeod and Warnock at SHST. Where we had more than one voucher, up to four have been listed (see annotated list under results).

In addition to the taxa listed, we designate the plant community or communities with which we found each species most closely associated. Community abbreviations are given below and are put in parentheses (see Ajilvsgi [1979] for additional description of these communities).

(U) = Upland pine savanna (aka Longleaf-Bluestem Uplands).

(W) = Wetland pine savanna (aka Longleaf-Blackgum Savannas).

(B) = Baygall/Stream course. A small part of this is Sweetgum-Oak Floodplain and Palmetto-Oak Flats.

(P) = Ephemeral pond. (These shallow ponds, which may become dry in drought years, but hold water longer than other areas, have not been adequately described on the Big Thicket.)

RESULTS

Annotated list of the vascular plants found in the Hickory Creek Unit taxa.

ACANTHACEAE

Justicia ovata (Walt.) Lindau var. *lanceolata* (Chapman) R.W. Long, (P,W) MM 4416; LB 25539

Ruellia humilis Nutt., (U) DS; MM 4245, 4452, 4527

ACERACEAE

Acer rubrum L. var. *rubrum*, (W) MM 4861

AGAVACEAE

Manfreda virginica (L.) Salisb. ex Rose, (U) GW 2285; DS; MM 4699

Yucca louisianensis Trel., (U) MM 4838

ALISMACEAE

Sagittaria papillosa Buch., (P) GW 2298; DS; MM 4141, 4160

ANACARDIACEAE

Rhus copallinum L., (U) MW 6490

Toxicodendron pubescens P. Mill., (U) LB 19236, 26135

Toxicodendron radicans (L.) Kuntze, (U) LB 25164

ANNONACEAE

Asimina parviflora (Michx.) Dunal, (U) MM 4284, 4442

APIACEAE

Centella erecta (L.f.) Fern., (W) DS; MM 4172, 4402

Eryngium integrifolium Walt., (W) PM s.n.; MM 4708, 4814; LB 26380

Eryngium yuccifolium Michx., (U) DS; MM 4497

Oxypolis filiformis (Walt.) Britt. ssp. *filiformis*, (W,P) DS; MM 4705; LB 26128

Ptiliminium nuttallii (DC.) Britt., (W) McL s.n.

AQUIFOLIACEAE

Ilex coriacea (Pursh) Chapman, (W,B) MM 4862

Ilex opaca Ait., (U) MM 4827

Ilex vomitoria Ait., (U) MM 4830

ARECACEAE

Sabal minor (Jacq.) Pers., (W,B) MM 4866

ARISTOLOCHIACEAE

Aristolochia reticulata Jacq., (U) MM 4272

ASCLEPIADACEAE

Asclepias amplexicaulis Sm., (U) DS

Asclepias longifolia Michx. ssp. *longifolia*, (W) MM 4504

Asclepias obovata Ell., (U) GW 2215; DS; LB 25550

Asclepias tuberosa L., (U) GW 2214; DS

ASTERACEAE

Ambrosia artemisiifolia L., (U) MM 4758

Arnoglossum ovatum (Walt.) H.E. Robins., (W) DS; MM 4494, 4706

Baccharis halimifolia L., (U) MM 4912

Berlandiera pumila (Michx.) Nutt. var. *pumila*, (U) DS; MM 4277; LB 25152, 26359

Bidens aristosa (Michx.) Britt., (U) DS; MM 4759

Boltonia diffusa Ell., (W) GW 3429; DS; MM 4533

Chrysopsis mariana (L.) Ell., (U) DS; MM 4449

Chrysopsis pilosa Nutt., (U) MM 4697, 4768

Cirsium horridulum Michx., (U) MM 4834

Conoclinium coelestinum (L.) DC., (U) MM 4756

Conyza canadensis (L.) Cronq., (U) MM 4762

Coreopsis linifolia Nutt., (W) PM s.n.; MM 4794

Coreopsis tinctoria Nutt., (U) DS

Echinacea sanguinea Nutt., (U) DS; MM 4439, 4453, 4528

Elephantopus carolinianus Raeusch., (U) LB 26347

Elephantopus tomentosus L., (U) MM 4447

Erechtites hieraciifolia (L.) Raf. ex DC., (U) LB 26161

Erigeron strigosus Muhl. ex Willd., (U) GW 2302; DS; MM 4162; LB 25165

Eupatorium capillifolium (Lam.) Small, (U) MM 4913

Eupatorium compositifolium Walt., (U) PH & CL 901108

Eupatorium hyssopifolium L., (W) MM 4810; LB 25537, 26150, 26351

Eupatorium lancifolium (T. & G.) Small, (U) LB 26138, 26139

Eupatorium leucolepis (DC.) T. & G., (W) GW 2181; DS; MM 4520; LB 26355

Eupatorium mohrii Greene, (U) GW 2182; LB 8150, 25545, 26379

Eupatorium rotundifolium L., (W) GW 404, 2282; DS; MM 4539

Eupatorium semiserratum DC., (U) LB 25538

Eurybia hemispherica (Alexander) Nesom, (U) DS; MM 4787

Euthamia leptcephala (T. & G.) Greene, (U) GW 3460

**Facelis retusa* (Lam.) Schultz-Bip., (U) GW 3348

Gamochaeta purpurea (L.) Cabrera, (U) MM 4248; LB 25171

Helenium amarum (Raf.) H. Rock, (**U**) DS
Helenium drummondii H. Rock, (**W**) DS; MM 4146
Helenium flexuosum Raf., (**U**) DS; MM 4237, 4458
Helianthus angustifolius L., (**W,U**) PM s.n.; DS; MM 4455, 4456
Helianthus annuus L., (**U**) DS
Helianthus debilis Nutt., (**U**) GW 2357
Helianthus mollis Lam., (**U**) GW 2183; DS; MM 4700
Hieracium gronovii L., (**U**) MM 4839
Hymenopappus artemisiifolius DC., (**U**) MM 4300
Liatris acidota Engelm. & Gray, (**W**) PH 901105; MM 4538; LB 26131a
Liatris elegans (Walt.) Michx., (**U**) DS; MM 4764
Liatris pycnostachya Michx., (**U,W**) DS; MM 4801
Marshallia graminifolia (Walt.) Small, (**W**) PM s.n.; DS; MM 4507, 4702
Oligoneuron nitidum (T. & G.) Small, (**U**) GW 354; DS; MM 4532
Pityopsis graminifolia (Michx.) Nutt., (**U**) DS; MM 4766
Pluchea foetida (L.) DC., (**W,P**) DS; MW 6496; MM 4519, 4701
Pluchea rosea Godfrey, (**W,P**) MM 4511, 4712, 4714
Rudbeckia grandiflora (D. Don) J.F. Gmel ex DC. var. *alismifolia* (T. & G.) Cronq., (**U**) DS; MM 4526; LB 25561
Rudbeckia hirta L., (**U**) DS; MM 4448
Silphium gracile Gray, (**U**) MM 4294, 4524, 4698
Solidago canadensis L., (**U**) LB 26367
Solidago ludoviciana (Gray) Small, (**U**) DS; LB 26146, 26148, 26162
Solidago odora Ait., (**U**) MM 4767; LB 5574b [RICE]
Solidago rugosa P. Mill., (**B**) GW 3461
Soliva sessilis* Ruiz & Pavon, (U**) LB 25150
Symphotrichum dumosum (L.) Nesom, (**B,W,U**) GW 2278; DS; MM 4457, 4534
Symphotrichum patens (Ait.) Nesom, (**U**) GW 3427
Symphotrichum pratense (Raf.) Nesom, (**U**) GW 3428; DS; MM 4291, 4531
Vernonia texana (Gray) Small, (**U**) PH & Liu 901110; DS; LB 26136

BIGNONIACEAE

Bignonia capreolata L., (**U**) MM 4254

BLECHNACEAE

Woodwardia areolata (L.) T. Moore, (**B**) MM 4886, 4950
Woodwardia virginica (L.) Sm., (**W,B**) MM 4155, 4304; LB 19231

BUDDLEJACEAE

Polypremum procumbens L., (**U**) DS; MM 4537

CAMPANULACEAE

Lobelia appendiculata A. DC., (**U**) DS; MM 4236
Lobelia flaccidifolia Small, (**W**) MM 4399, 4900
Lobelia puberula Michx., (**W,U**) GW 2184, 3454; DS; MM 4784
+Lobelia reverchonii B.L. Turner, (**W**) GW 3453; DS; MM 4813
Triodanis perfoliata (L.) Nieuwl. var. *biflora* (Ruiz & Pavon) Bradley, (**U**) MM 4240

CAPRIFOLIACEAE

Lonicera japonica* Thunb., (U**) MM 4842
Lonicera sempervirens L., (**U**) LB 26354
Viburnum dentatum L., (**U**) MM 4180, 4303

CISTACEAE

Helianthemum carolinianum (Walt.) Michx., (**U**) DS
Lechea mucronata Raf., (**U**) DS; LB 26140
Lechea tenuifolia Michx., (**U**) LB 19510

CLUSIACEAE

Hypericum crux-andreae (L.) Crantz, (**W**) DS; MM 4509; LB 26137
Hypericum galioides Lam., (**W**) PM s.n.; DS; MM 4157, 4424
Hypericum gentianoides (L.) B.S.P., (**U**) DS; MM 4500; LB 25572
Hypericum gymnanthum Engelm. & Gray, (**U**) LB 25571
Hypericum hypericoides (L.) Crantz., (**U**) MM 4899
Hypericum mutilum L., (**P**) LB 26131

COMMELINACEAE

Commelina virginica L., (**U**) DS
Tradescantia hirsutiflora Bush, (**U**) MM 4943

CONVOLVULACEAE

Ipomoea cordatotriloba Dennst., (**U**) MM 4785
Ipomoea pandurata (L.) G.F.W. Mey., (**U**) DS; LB 26127
Jacquemontia tamnifolia (L.) Griseb., (**U**) MM 4788

CORNACEAE

Cornus florida L., (**U**) MM 4852
Nyssa biflora Walt., (**P,B,W**) GW 2253; MM 4493; LB 25166
Nyssa sylvatica Marsh., (**W,B**) MM 4311, 4909, 4910; MW 3288

CUSCUTACEAE

+*Cuscuta* sp., (U) MM 4919

CYPERACEAE

Carex complanata Torr. & Hook., (B,U) MM 4888

Carex frankii Kunth., (P) DS

Carex glaucescens Ell., (P,B) DS; LB 25560

Carex intumescens Rudge, (P,B) MM 4885

Cyperus croceus Vahl, (U) MM 4774

Cyperus haspan L., (W) GW 2202 [SHST]; DS; LB 26363b

Cyperus retrorsus Chapman, (U) LB 26370

Cyperus virens Michx., (P) DS

Eleocharis microcarpa Torr., (P,W) MM 4394

Eleocharis tuberculosa (Michx.) Roemer & J.A. Schultes, (P,W) MM 4265, 4282, 4401, 4406

Fimbristylis dichotoma (L.) Vahl., (W) MM 4395

Fuirena breviseta (Coville) Coville, (W,P) MM 4709; LB 26152

Fuirena bushii Kral, (W,P) MM 4387, 4536; LB 25548, 25551

Fuirena squarrosa Michx., (W) GW 2196 [SHST]

Isolepis carinata Hook. & Arn. ex Torr., (W,U) MM 4878, 4891

Rhynchospora colorata (L.) H. Pfeiffer, (P,W) DS

Rhynchospora corniculata (Lam.) Gray, (P) LB 25548, 26151

Rhynchospora elliottii A. Dietr., (P,W) MM 4151, 4463, 4938; LB 25519

Rhynchospora filifolia Gray, (P,W) MM 4461, 4545b; LB 25557

Rhynchospora glomerata (L.) Vahl., (W) DS

Rhynchospora gracilentia Gray, (W) MM 4421; LB 25525, 25529, 25542a

Rhynchospora harveyi W. Boott, (W) LB 25565

Rhynchospora inexpansa (Michx.) Vahl., (W) LB 25531

Rhynchospora latifolia (Baldw. ex Ell.) W. Thomas, (P,W) GW 2216; MM 4460

Rhynchospora oligantha Gray, (W) MM 4250, 4310; LB 25521a

Rhynchospora perplexa Britt., (W) MM 4513; LB 4483 [RICE], 25555

Rhynchospora plumosa Ell., (W) DS; MM 4249, 4259; LB 25172

Rhynchospora pusilla Chapman ex M.A. Curtis, (W) DS; MM 4389; LB 25563, 25573

Rhynchospora rariflora (Michx.) Ell., (W) MM 4252; LB 25521c

Rhynchospora recognita (S. Gale) Kral, (W) DS; MM 4293; LB 25536, 25547

+*Scleria baldwinii* (Torr.) Steud., (P,W) MM 4514; LB 25169, 25556

Scleria ciliata Michx., (W) LB 25144

Scleria georgiana Core, (W) MM 4260, 4407; LB 25177, 25524

Scleria pauciflora Muhl. ex Willd., (W) LB 25173

Scleria reticularis Michx., (P,W) LB 1606, 6606, 25524b,

Scleria triglomerata Michx., (W,U) MM 4916

CYRILLACEAE

Cyrilla racemiflora L., (B,W) MW 3978, 6483; MM 4869

DENNSTAEDTIACEAE

Pteridium aquilinum (L.) Kuhn, (U) MM 4302, 4865

DROSERACEAE

Drosera brevifolia Pursh, (W) MM 4163

Drosera capillaris Poir., (W) MM 4306, 4432

EBENACEAE

Diospyros virginiana L., (U,W) MM 4901; LB 26360

ERICACEAE

Lyonia mariana (L.) D. Don, (W,B) MM 4871

Rhododendron viscosum (L.) Torr., (U,W,B) DS; MM 4450

Vaccinium arboreum Marsh., (U) MM 4288

Vaccinium corymbosum L., (U) MM 4147, 4153, 4168; LB 26134

Vaccinium stamineum L., (U) DS; MW 3291; McL

ERIOCAULACEAE

Eriocaulon decangulare L., (W) GW 3365; DS; MM 4423; LB 19234

Lachnocaulon anceps (Walt.) Morong, (W) GW 3368; DS; MM 4239, 4434

EUPHORBIACEAE

Chamaesyce maculata (L.) Small, (U) LB 26345

Cnidoscolus texana (Muell.-Arg.) Small, (U) MM 4904

Croton argyranthemus Michx., (U) DS; MM 4292, 4775

Croton capitatus Michx., (U) MM 4757

Croton willdenowii G.L. Webster, (U) LB 14891, 19509, 25523, 25553

Euphorbia corollata L., (U) DS; MM 4777

**Phyllanthus urinaria* L., (U) LB 26348

Stillingia sylvatica Garden ex L., (U) MM 4246

Tragia smallii Shinnars, (U) MM 4441; LB 19230, 25148

Tragia urticifolia Michx., (U) DS; MM 4238; LB 25149, 25163

Triadica sebifera* (L.) Small, (U,B,W**) MM 4850

FABACEAE

Aeschynomene indica L., (**U**) LB 14893

Albizia julibrissin* Durz., (U**) LB 26349

Baptisia nuttalliana Small, (**U**) MM 4835, 4854, 4873

Centrosema virginianum (L.) Benth., (**U**) MW 6493

Chamaecrista fasciculata (Michx.) Greene, (**U**) DS; LB 26144

Crotolaria sagittalis L., (**U**) DS; MM 4256; LB 26142

Desmodium paniculatum (L.) DC., (**U**) LB 26350, 26366

Kummerowia striata* (Thunb.) Schindl., (U**) GW 2339

Mimosa hystricina (Small) B.L. Turner, (**U,W**) DS; MM 4289, 4440; LB 26163

Orbexilum simplex (Nutt. ex T. & G.) Rydb., (**U**) DS; MM 4915; LB 25157

Rhynchosia latifolia Nutt. ex T. & G., (**U**) DS

Strophostyles umbellata (Muhl. ex Willd.) Britt., (**U**) PH & Liu 901107

Stylosanthes biflora (L.) B.S.P., (**U**) DS

Tephrosia onobrychoides Nutt., (**W**) DS; MM 4393; MW 6486

Trifolium dubium* Sibthorp, (U**) MM 4893

FAGACEAE

Quercus falcata Michx., (**U**) GW 2281; MM 4840, 4848, 4859

Quercus hemisphaerica Bartr. ex Willd., (**B**) MM 4889; LB 26358

Quercus incana Bartr., (**U**) MM 4273

Quercus laurifolia Michx., (**U**) LB 26159

Quercus margarettiae Ashe ex Small, (**U**) GW 2276

Quercus marilandica Muenchh., (**U**) MM 4837

Quercus muehlenbergii Engelm., (**U**) MM 4841

Quercus nigra L., (**U,B**) GW 2277; MM 4843; LB 26147

Quercus similis Ashe, (**B**) LB 25154

Quercus stellata Wangenh., (**U**) MM 4847

Quercus virginiana P. Mill., (**U**) DS; MM 4911

GENTIANACEAE

Sabatia gentianoides Ell., (**W**) DS; MM 4426, 4508

HALORAGACEAE

Prosperpinaca pectinata Lam., (**P**) MM 4540; LB 26160

HAMAMELIDACEAE

Liquidambar styraciflua L., (**U,W**) MM 4856

HYDROPHYLLACEAE

Hydrolea ovata Nutt. ex Choisy, (**P**) DS; MM 4713

IRIDACEAE

Alophia drummondii (Graham) R.C. Foster, (**U**) DS; MM 4451, 4529

Sisyrinchium campestre Bickn., (**UW**) MM 4144b, 4159, 4167, 4301[SBSC]

Sisyrinchium rosulatum Bickn., (**U**) MM 4257, 4914

Sisyrinchium sagittiferum Bickn., (**U,W**) GW 2304; MM 4137, 4167a

JUNCACEAE

Juncus brachycarpus Engelm., (**U**) MM 4944, 4948

Juncus bufonius L., (**W**) LB 25173

Juncus dichotomus Ell., (**W**) MM 4253, 4872, 4902; LB 25143

Juncus diffusissimus Buckl., (**W**) MM 4883

Juncus effusus L., (**W**) DS

Juncus ellottii Chapman, (**W**) DS; MM 4881; LB 25147, 25167

Juncus marginatus Rostk., (**W**) DS; LB 25159

Juncus nodatus Coville, (**P**) DS; MM 4939, 4940

Juncus repens Michx., (**P**) MM 4946

Juncus scirpoides Lam., (**U**) DS

Juncus tenuis Willd., (**W**) MM 4896; LB 25145

Juncus validus Coville, (**P**) MM 4945, 4247, 4427

LAMIACEAE

Hedeoma hispida Pursh, (**U**) MM 4894

Hyptis alata (Raf.) Shinnars, (**W**) DS; MM 4495, 4802

Monarda punctata L., (**U**) DS

Physostegia digitalis Small, (**W**) GW 355; DS; MM 4525; LB 19235

Prunella vulgaris L., (**U**) MM 4255

Pycnanthemum tenuifolium Schrad., (**U**) MM 4454

Scutellaria elliptica Muhl. ex Spreng., (**U**) MM 4908; LB 25161

Scutellaria integrifolia L., (**W**) DS; MM 4295, 4917; LB 25161

Trichostema dichotomum L., (**U**) MM 4763

LAURACEAE

Persea borbonia (L.) Spreng., (**U**) LB 26352, 26377

Persea palustris (Raf.) Sarg., (**U,B,W**) MM 4166; MW 3980; LB 25534

Sassafras albidum (Nutt.) Nees, (**U**) MM 4855; LB 26376

LENTIBULARIACEAE

Pinguicula pumila Michx., (**W**) MM 4876; MW 4157

Utricularia radiata Small, (P) MM 4875
Utricularia subulata L., (W) GW 3384; DS

LILIACEAE

Aletris aurea Walt., (W) DS; MM 4242; MW 3977
Allium canadense L., (U,W) MM 4269
Hymenocallis liriosme (Raf.) Shinnars, (P) GW 2332; MM 4145; LB 25170
Hypoxis curtisii Rose, (P) LB 26384
Hypoxis rigida Chapman, (W) MM 4270, 4897; LB 25142
Nothoscordum bivalve (L.) Britt., (U) MM 4143
Schoenolirion croceum (Michx.) Wood, (W) DS; MM 4173
Tofieldia racemosa (Walt.) B.S.P., (W) GW 350; DS; MM 4505; LB 19229

LINACEAE

Linum medium (Planch.) Britt., (U,W) PM 4; DS; MM 4251, 4422

LOGANIACEAE

Gelsemium sempervirens A. St.-Hil., (U) MM 4183
Mitreola sessilifolia (J.F. Gmel.) G. Don, (W) PM 1; DS; MM 4544

LYCOPODIACEAE

Lycopodiella appressa (Chapman) Cranfill, (W) PM 18; MM 4307, 4430, 4541
Lycopodiella caroliniana (L.) Pichi Sermolli, (W) GW 358

LYGODIACEAE

Lygodium japonicum (Thunb.ex Murr.) Sw., (U) LB 26164

MAGNOLIACEAE

Magnolia grandiflora L., (U) MM 4849
Magnolia virginica L., (W,B) MM 4305

MALVACEAE

Hibiscus moscheutos L. ssp. *lasiocarpus* (Cav.) O.J. Blanchard, (W,B,P) GW 2185; MM 4403, 4545

MELASTOMATACEAE

Rhexia lutea Walt., (W) DS; MM 4425, 4523
Rhexia mariana L., (W) DS; MM 4428, 4522
Rhexia petiolata Walt., (W) DS

MYRICACEAE

Morella caroliniensis (P. Mill.) Small, (B,W) MM 4170; McL; MW 3292
Morella cerifera (L.) Small, (U,B,W) MM 4828

OLEACEAE

Chionanthus virginicus L., (U) LB 25151

**Ligustrum sinense* Lour., (U) MM 4154, 4868

ONAGRACEAE

Ludwigia hirtella Raf., (W,U) DS; MM 4391, 4415; LB 25522
Ludwigia linearis Walt., (W) PM 13; DS; MM 4503, 4710
Ludwigia pilosa Walt., (P) MM 4790; LB 14895
Oenothera linifolia Nutt., (U) DS; MM 4235, 4244

OPHIOGLOSSACEAE

Botrychium biternatum (Sav.) Underwood, (U) MM 4898

ORCHIDACEAE

Calopogon oklahomensis D.H. Goldman, (W,U) MM 4864; GW 3358 [TAMU]
Calopogon tuberosus (L.) B.S.P., (W) DS; MM 4429, 4937
Isotria verticillata Raf., (B) GW 1475
Platanthera nivea (Nutt.) Luer, (W) GW 349; DS; MW 6480; McL
Pogonia ophioglossoides (L.) Ker-Gawl., (W) DS
Spiranthes brevilabris Lindl., (W) DS
Spiranthes praecox (Walt.) S. Wats., (U,W) GW 3380; MM 4271, 4279
Spiranthes tuberosa Raf., (U,W) LB 18627

OSMUNDACEAE

Osmunda cinnamomea L., (W,B) MM 4863
Osmunda regalis L., (W,B) DS; MM 4158, 4261

OXALIDACEAE

Oxalis dillenii Jacq., (U) MM 4142, 4178
Oxalis lyonii Pursh, (U) GW 2303; MM 4161
Oxalis violacea L., (U) DS; LB 26385

PASSIFLORACEAE

Passiflora lutea L., (U) MM 4443

PINACEAE

Pinus echinata P. Mill., (U) MM 4836
Pinus palustris P. Mill., (W,U) MM 4857
Pinus taeda L., (W,U) MM 4858

PLANTAGINACEAE

Plantago aristata Michx., (U) DS
Plantago virginica L., (U) MM 4298

PLATANACEAE

Platanus occidentalis L., (U) LB 26369

POACEAE

Andropogon gerardii Vitman, (U) DS
Andropogon ternaris Michx., (U) GW 2270; LB 26365

- Andropogon virginicus* L., (**W,P**) GW 2272; DS; MM 4781, 4791
- Anthaenantia rufa* (Nutt.) J.A. Schultes, (**W**) GW 2284; DS; MM 4797; LB 26381
- Anthaenantia villosa* (Michx.) Beauv., (**W**) GW 2203, 2207; DS; LB 26364
- Aristida longespica* Poir. var. *geniculata* (Raf.) Fern., (**U**) GW 2219; DS
- Aristida palustris* (Chapman) Vasey, (**P,W**) GW 2205; MM 4704; LB 26153
- Aristida purpurascens* Poir. var. *purpurascens*, (**U**) MM 4783
- Aristida purpurascens* Poir. var. *virgata* (Trin.) Allred, (**U,P,W**) DS; MM 4800; LB 5576, 26143
- Axonopus fissifolius* (Raddi) Kuhlman, (**U,W**) DS; MM 4390, 4778
- Chasmanthium laxum* (L.) Yates var. *laxum*, (**B**) MM 5157a, 5157b; LB 26344, 26368
- Coelorachis cylindrica* (Michx.) Nash, (**U**) MM 4942
- Coelorachis rugosa* (Nutt.) Nash, (**P,W**) GW 2188; DS; MM 4711; LB 26154
- Dichanthelium aciculare* (Desv. ex Poir.) Gould & Clark, (**U**) DS
- Dichanthelium acuminatum* (Sw.) Gould & Clark var. *fasciculatum* (Torr.) Freckmann, (**P,U,W**) DS; MM 4262; LB 25155, 25158
- Dichanthelium commutatum* (J.A. Schultes) Gould, (**W**) DS; MM 4275
- Dichanthelium consanguineum* (Kunth) Gould & Clark, (**U,W**) MM 4263, 4280, 4412; LB 19232
- Dichanthelium dichotomum* (L.) Gould var. *tenuis* (Muhl.) Gould & Clark, (**W**) DS; LB 25146a
- Dichanthelium longiligulatum* (Nash) Freckmann, (**W**) MM 4234, 4462; LB 25168, 25175
- Dichanthelium scabriusculum* (Ell.) Gould & Clark, (**W**) MM 4392
- Dichanthelium scoparium* (Lam.) Gould, (**U,W**) MM 4411
- Dichanthelium sphaerocarpon* (Ell.) Gould var. *sphaerocarpon*, (**U**) MM 4290; LB 25554
- Dichanthelium sphaerocarpon* (Ell.) Gould var. *isophyllum* (Scribn.) Gould & Clark, (**U**) LB 25162
- Dichanthelium villosissimum* (Nash) Freckmann, (**U,P,W**) MM 4286, 4299, 4444; LB 26354
- Dichanthelium wrightianum* (Scribn.) Freckmann, (**P**) LB 26126
- Digitaria ciliaris* (Retz.) Koel., (**U**) LB 26346
- Digitaria cognata* (Schult.) Pilger. ssp. *cognata*, (**U**) MM 4779
- **Digitaria ischaemum* (Schreb.) Schreb. ex Muhl., (**U**) DS
- Eragrostis elliottii* S. Wats., (**W**) GW 2247
- Eragrostis refracta* (Ell.) Scribn., (**W**) DS; MM 4796
- Eragrostis secundiflora* J. Presl, (**U**) DS
- Eragrostis spectabilis* (Pursh) Steud., (**U**) GW 2268, 2287; LB 14894, 26141
- Gymnopogon ambiguus* (Michx.) B.S.P., (**U**) GW 2312; DS; LB 6605
- +*Gymnopogon brevifolius* Trin., (**U**) MM 4780 [SBSC]
- Muhlenbergia capillaris* (Lam.) Trin. var. *capillaris*, (**W**) DS; MM 4793; LB 26373
- Panicum anceps* Michx., (**W**) DS
- Panicum brachyanthum* Steud., (**U,W**) DS; MM 4770
- Panicum hemitomon* J.A. Schultes, (**P**) LB 25543
- Panicum rigidulum* Bosc. ex Nees, (**P,U,W**) MM 4715, 4772; LB 25558, 26106
- Panicum tenerum* Bey. ex Trin., (**P,W**) MM 4410, 4433, 4502, 4543, 4815; LB 6669, 14896, 25523a
- Panicum verrucosum* Muhl., (**W**) MM 4812; LB 6607
- Panicum virgatum* L., (**P,W**) DS
- Paspalum bifidum* (Bertol.) Nash, (**U**) LB 6666
- Paspalum floridanum* Michx., (**U,W**) GW 2190; DS; MM 4771; LB 25528
- Paspalum laeve* Michx., (**W**) LB 26383
- Paspalum lividum* Trin., (**P**) GW 2222
- **Paspalum notatum* Fluegge, (**U**) DS
- Paspalum plicatulum* Michx., (**U,W**) DS; MM 4243, 4388, 4501
- Paspalum praecox* Walt., (**W**) GW 2192; DS; MM 4404; LB 25541
- Paspalum setaceum* Michx., (**W**) GW 2221; DS; MM 4799; LB 25535
- **Paspalum urvillei* Steud., (**U**) DS
- **Poa annua* L., (**U**) MM 4831
- Saccharum giganteum* (Walt.) Pers., (**P**) CL 901176, 901177
- **Sacciolepis indica* (L.) Chase, (**P**) GW 2194
- Schizachyrium scoparium* (Michx.) Nash var. *divergens* (Hack.) Gould, (**U,W**) GW 2186; DS; MM 4765; LB 26375
- Schizachyrium tenerum* Nees, (**U**) MM 4696, 4782; LB 19508
- Setaria parviflora* (Poir.) Kerguelen, (**U**) DS
- Sporobolus junceus* (Beauv.) Kunth, (**U**) DS; MM 4773; LB 26356
- Steinchisma hians* (Ell.) Nash, (**U**) MM 4398, 4941

Tridens ambiguus (Ell.) J.A. Schultes, (U,W) GW 2208; DS; MM 4760; LB 25562,

Tridens strictus (Nutt.) Nash, (W) GW 2193; LB 5577 [RICE]; MM 4792, 4806

Tripsacum dactyloides (L.) L., (U) DS; MM 4459

POLEMONIACEAE

Phlox pilosa L., (U) DS

POLYGALACEAE

Polygala cruciata L., (W) GW 353; DS

Polygala incarnata L., (U,W) GW 3385; DS; MM 4276; LB 19233

Polygala mariana P. Mill., (U,W) DS; MM 4278, 4530

Polygala polygama Walt., (U) DS

Polygala ramosa Ell., (W) DS; MM 4405

POLYGONACEAE

Polygonum punctatum Ell., (P) LB 26372

PRIMULACEAE

Anagallis minima (L.) Krause, (U) MM 4895

RANUNCULACEAE

Delphinium carolinianum Walt., (U) MM 4496

RHAMNACEAE

Berchemia scandens (Hill) K. Koch, (U) MM 4829

Frangula caroliniana (Walt.) Gray, (U) MM 4826

ROSACEAE

Crataegus marshallii Egglest., (U) GW 2301

Crataegus opaca Hook. & Arn., (B,P,W) GW 2305; MM 4135, 4136, 4890

Crataegus spathulata Michx., (B) MM 4949

Photinia pyrifolia (Lam.) Robertson & Phipps, (W) DS; MM 4148

Prunus caroliniana (P. Mill.) Ait., (U) LB 26353

Prunus serotina Ehrh., (U) MM 4187

**Pyrus calleryana* Dcne., (U) MM 4184

Rubus argutus Link, (U) GW 2299; MM 4867

Rubus trivialis Michx., (U) GW 2300; MM 4176

RUBIACEAE

Cephalanthus occidentalis L., (W,P) MM 4417, 4515

Diodia teres Walt., (U) DS; LB 26145

Diodia virginiana L., (W) MM 4542; LB 26133

Galium pilosum Ait., (U) MM 4437; LB 25153

Hedyotis nigricans (Lam.) Fosberg, (U) DS; MM 4498

Houstonia pusilla Schoepf, (U) MM 4177

Mitchella repens L., (U) MM 4853

Oldenlandia boscii (DC.) Chapman, (P) LB 19227, 25544, 25570

SARRACENIACEAE

+*Sarracenia alata* Wood, (W) MM 4175; McL

SCROPHULARIACEAE

Agalinis fasciculata (Ell.) Raf., (U) DS

Agalinis oligophylla Pennell, (U) GW 3448, 3455; MM 4769; LB 6603

Agalinis purpurea (L.) Pennell, (U) LB 26343, 26378

Agalinis viridis (Small) Pennell, (U) GW 3426

Gratiola brevifolia Raf., (U,W) DS; MM 4266

Gratiola pilosa Michx., (U) MM 4499

**Lindernia crustacea* (L.) F. Muell., (P) LB 26363

Mecardonia acuminata (Walt.) Small, (U,W) MM 4776

Penstemon laxiflorus Pennell, (U) DS; MM 4274

SMILACACEAE

Smilax bona-nox L., (U) PM 15; DS

Smilax glauca Walt., (W,U) DS; MM 4185; LB 19246

Smilax laurifolia L., (W,B) MM 4870

Smilax pumila Walt., (U) MM 4832

Smilax rotundifolia L., (U) MM 4903; LB 25160

Smilax smallii Morong, (U) DS; MM 4182, 4851

SOLANACEAE

Solanum ptychanthum Dunal, (U) LB 26155

SYMPLOCACEAE

Symplocos tinctoria (L.) L'Her., (U) MM 4171

VERBENACEAE

Callicarpa americana L., (U) MM 4445

VIOLACEAE

Viola lanceolata L., (W) MM 4174

Viola palmata L., (U) MM 4138, 4164, 4186

Viola primulifolia L., (W) MM 4144a, 4918

Viola sagittata Ait., (U) MM 4165

VITACEAE

Parthenocissus quinquefolia (L.) Planch., (U) MM 4860

Vitis rotundifolia Michx., (U) MM 4833

XYRIDACEAE

Xyris ambigua Bey. ex Kunth, (W) DS; MM 4703; McL; LB 26132

Xyris baldwiniana J.A. Schultes, (W) MM 4156, 4397, 4419; LB 25524a

Xyris stricta Chapman var. *obscura* Kral, (W) LB 25540, 26129

Xyris torta Sm., (W) DS; MM 4517; LB 18626a, 25527

Notes:

Cuscuta sp. The specimen had no flowers or fruit.

Gymnopogon brevifolius. This is the third record for this species in Texas.

Lobelia reverchonii. We prefer to keep this a good species.

Sarracenia alata. This species was introduced to the Hickory Creek Unit by Geraldine Watson in the early 1970's. It occurs naturally in wetland pine savannas nearby.

Scleria baldwinii. This is the first pineywoods region record.

DISCUSSION

Our plant list numbers 401 taxa (385 native) for the Hickory Creek Unit. Previous plant lists (Watson 1982; Yu n.d.) numbered well over 500 taxa. Why the discrepancy? Three possibilities suggest themselves: 1) our list is only about 75 percent complete, 2) the Unit was much richer 25 years ago when the first lists were developed, and 3) previous lists are at least partly conjectural, being "padded" with taxa that could possibly be there but which have not actually been found there.

These possibilities are not mutually exclusive and, at the present time, it is impossible to fully assess them. However, some comments are apropos.

Before we began collecting, the documented plant list for the Hickory Creek Unit numbered about 190 taxa (Brown n.d.). We doubled the list in 17 field trips in 2000 and 2001. If the total number of taxa at Hickory Creek numbered 530—i.e., only about one third had previously been documented—one would expect that, at least at first, approximately two out of every three of our collections would have been an addition. This was not the case, and we actively avoided recollecting in many cases. Additionally, on the basis of the specimens collected from the Hickory Creek Unit in the 1970's and 1980's and reported by Watson (1982), there is no evidence that there then existed plant communities additional to those that occur there now that would account for the additional taxa. The same taxa collected by Streng and Watson in the 1970's were recollected in 2000–2001, and Watson's listed species do not signal other communities. Finally, aerial photographs, scientific literature, historical accounts, and reminiscences by "old timers" clearly do not place additional plant communities there. With only four communities represented, one would expect on the basis of typical community counts (75 to 125 taxa per community type with some overlap among communities) only 400 taxa. Consequently, while we have obviously not found every taxon that exists at the Hickory Creek Unit, we feel that our list of 401 taxa is over 90 percent complete.

There is some evidence to support the second hypothesis. The Hickory Creek Unit is severely fire suppressed and has lost much of its herbaceous layer (Streng & Harcombe 1982; McClung 1988; MacRoberts & MacRoberts 2000). Today there remain only small patches of the extensive pine savannas that were

previously there. Some taxa undoubtedly could have been lost or at least become very rare in the ensuing years. For example, we did not find several of the conspicuous orchids that had been collected in the 1970's. Nonetheless, it is unlikely that 125 taxa have been lost in that period.

The third hypothesis probably explains a good deal of the discrepancy. The Parks and Cory (1936) Big Thicket plant list was partly conjectural ("could possibly be there") (Cozine 1993) and there is no reason to suppose that the Watson (1982) list was not also partly conjectural. Many species on Watson's (1982) list do not occur in the area and were probably added either because of misidentification (both in the field and of herbarium specimens) or because of conjecture. Cases in point include *Eriocaulon koernickianum* Van Heurck & Muell.-Arg. (undoubtedly misidentified *Lachnocaulon anceps*) and *E. septangulare* With. (probably misidentified *E. decangulare*) (see Brown & Brown 1996).

Thus, while it is the case that our list is incomplete and that a few taxa may have been lost, most taxa that have grown in the Hickory Creek Unit during the past quarter century have been collected (probably 90+ percent). We believe that the Hickory Creek Unit has about 400 to 425 native taxa, far fewer than have been attributed to it.

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